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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/170,225	10/13/1998	TSUTOMU SAWA	30220-048	6563

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EXAMINER

MCALLISTER, STEVEN B

ART UNIT	PAPER NUMBER
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3627

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/170,225

Applicant(s)

SAWA ET AL.

Examiner

Steven B. McAllister

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ML

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-5 and 7-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frandsen in view Saylor, Jr

Frandsen shows an elastic material and high hardness particles dispersed throughout and projecting from the elastic material (Fig. 3). It inherently shows that the projection increases with increasing elasticity since greater elasticity allows for greater movement of the particles within the belt. It is further inherent that the projecting amount of the high hardness particles increases as axial stress is applied to the belt by a fed member, since this is the case with any elastic material – under axial stress, the belt will decrease in thickness and pull away from the rigid high hardness particles. It is also inherent that the hardness is 15-90 since the hardness of ultra high molecular weight polyethylene is 58-62. Frandsen does not explicitly show that the particle size is 3-300 micrometers, or that the particle density is between 10-70 percent by weight. Saylor shows particles with a size of 3-300 micrometers and a weight density of 10-70 percent. It would have been obvious to one of ordinary skill in the art to modify the

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apparatus of Frandsen by using particles with a size of 3-300 micrometers and a weight density of 10-70 percent in order to provide a rough surface.

As to claim 4, Frandsen in view of Saylor, Jr. disclose all elements of the claim except the filament disposed on the driving surface. However, it would have been an obvious matter of design choice to place the filament on the driving surface side since it does not appear that the specific placement solves any specific problem or is for any particular reason and it appears that the belt would perform equally well with the filaments located in either location.

Claims 1, 3-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold in view of Saylor, Jr.

Arnold shows a belt with an elastic base material layer 86, the layer having a hardness of between 15 and 90 (col. 10, lines 10-20) and a second layer 82 (col. 10, lines 10-20). It does not show a particle containing layer, the layer 10-70% of its weight composed of 3-300 micrometer particles. Saylor, Jr. shows a layer 16 with 3-300 micrometer sized particles (col. 3, lines 57-61) and comprising 10-70% of the weight of the layer (col. 3, line 40 - col. 4, line 30). It would have been obvious to one of ordinary skill in the art to modify the second elastic layer 82 of Arnold by adding the particles as taught by Saylor, Jr. in order to provide a rough surface on the load surface of the belt. It is inherent that the projection of the particles of the combination increases with increasing elasticity since greater elasticity allows for greater movement of the particles within the belt. It is further inherent that the projecting amount of the high hardness

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particles increases as axial stress is applied to the belt by a fed member, since this is the case with any elastic material – under axial stress, the belt will decrease in thickness and pull away from the rigid high hardness particles.

As to claims 3 and 7, it is noted that Arnold discloses a filament in the central portion of the belt (see Fig. 8B).

As to claims 4 and 8, Arnold in view of Saylor, Jr. disclose all elements of the claim except the filament disposed on the driving surface. However, it would have been an obvious matter of design choice to place the filament on the driving surface side since it does not appear that the specific placement solves any specific problem or is for any particular reason and it appears that the belt would perform equally well with the filaments located in either location.

As to claim 9, it is noted that the hardness of the second material is less than the hardness of the first.

### ***Response to Arguments***

Applicant's arguments filed 2/13/04 have been fully considered but they are not persuasive.

The 35 USC 112 rejections have been withdrawn in light of the applicant's amendments.

Regarding the 35 USC 103 rejection of claims 1 and 4, applicant appears to argue that the improper because the material of the base reference (Frandsen) is

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different than the present invention and the goals are different in the two inventions.

However, the claim does not recite a specific material or specific range of elasticities.

Regarding this rejection the applicant further argues that there is not motivation to combine the two references. The examiner disagrees. Saylor is used to teach particle size and density of the distribution of particles. Saylor explicitly teaches these elements and explicitly provides the motivation of providing a sufficient coefficient of friction.

Applicant further appears to argue that the 103 rejection is improper because the Saylor is from a nonanalogous art. However, Saylor has the same problem as Frandsen and as the present invention – providing a high friction surface. Further, Saylor solves the problem in substantially the same way as both the present invention and Frandsen – by embedding protruding high hardness particles. The teaching of Saylor is directly related to this aspect -- the size and the distribution density of particles to achieve a high friction surface.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven B. McAllister whose telephone number is (703) 308-7052. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert P. Olszewski can be reached on (703) 308-5183. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Steven B. McAllister